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MAKING SEPARATE EQUAL:

THE INTEGRATION OF BLACK AND WHITE SCHOOL FUNDS IN KENTUCKY, 1882

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On August 6, 1882, the Kentucky electorate, 84 percent of which was white, approved by a 54 to 46 percent margin a referendum proposal to increase school property taxes for whites by 10 percent in order to triple state-level educational expenditures for black children, thereby bringing them up to the same amount as white expenditures. Passage of the measure equalizing state spending, which accounted for about 64 percent of the total amount allocated to public primary and secondary schools in Kentucky in the 1880s, was, according to state school superintendent Joshua Desha Pickett, "the most remarkable fact in the school history of Kentucky."<sup>1</sup>

Why did this referendum, an event not directly paralleled, so far as I know, in any other Southern state, take place? What does the passage of the proposal indicate about attitudes toward blacks and black education held by various segments of the Kentucky electorate blacks themselves, as well as white Republicans and various factions of the Democracy? How did the equalization issue fit into the larger, ongoing

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<sup>\*</sup> I want to thank my colleague Forrest Nelson for introducing me to logit, shepherding the computerized analysis, and straightening out my, alas, too numerous, confusions. Any remaining errors are my own fault.

political struggles in Kentucky and the South? By bringing both quantitative and impressionistic evidence to bear on these questions, I hope in this paper to illuminate at least one important and previously almost unnoticed corner of the largely murky political and educational history of the border states, as well as to demonstrate the usefulness of a statistical technique -- Logit analysis -- which has so far escaped the attention of historians.<sup>2</sup>

Since they were never subjected to military Reconstruction and escaped having their antebellum constitutions recast by Republican-dominated constitutional conventions, whites in the border states of Delaware, Kentucky, and Maryland were much freer than their ex-Confederate counterparts to define the legal status of their former slaves as they wished. While the reconstructed states were all constrained by their 1866-68 constitutions to provide "equal benefits" for or "no distinctions" between blacks and whites in their segregated public schools, the Democrats who controlled the three border states made only halting, ungenerous gestures toward black education. Maryland appropriated separate and unequal funds for black schools from her state treasury. Delaware kept the taxes levied on each race separate, and, as the Johnsonian Reconstruction governments in Florida and Texas had proposed to do, starved black schools by allocating to them only the funds collected from Negroes.<sup>3</sup>

Kentucky was even less liberal. Pressured by the Freedmen's Bureau, the state in 1866 dedicated half of the poll and property taxes paid by blacks to black schools, which raised about 13.5 cents per black child from 6 to 20 years of age. White expenditures per child were about

six times as high. In 1868, however, the legislature, dominated by a "Bourbon" faction which openly "scoffed at education for Negroes," declared that all money from black taxes was to go for the support of Negro paupers. There were apparently no state-supported black schools in Kentucky from 1868 until 1874, when the legislature, anticipating Congressional passage of a bill allocating funds from public lands to those states which provided a free education to all children between 6 and 16, revived the separate-tax-and-allocation system for black education.<sup>4</sup> The state bill, which most Republicans in the legislature opposed as unfair to blacks, provided that all state property and license taxes paid by Negroes (as opposed to about 44 percent of those on whites) would go to black education. Because the tax on black property would yield such a small sum, the legislature additionally authorized a one dollar poll tax on black, but not white, male adults. Though no funds from white taxes would be spent for black education, the legislature did hold out the promise that some of the expected federal aid might be used to upgrade black schools. Since the federal largesse never materialized, however, the system remained racially inequitable both in taxation and expenditures. In 1876, for example, the state allocated \$1.90 for each white child between the ages of 6 and 20, but only 30 cents for each black child between 6 and 16, or nearly nine times as much for whites as blacks if the age bases of the two groups had been equalized.<sup>5</sup>

Blacks and their white Republican allies denounced the system immediately and vociferously. Black leaders, who had been demanding equal taxation and equal education in conventions since at least 1869,

held a statewide convention in Lexington in 1875 to organize a petition drive to convince the legislature to merge the two funds and equalize taxes.<sup>6</sup> Since they contributed at least a third, and probably a much larger percentage, of the Republican votes in the state, the Negroes easily pressured the 1875 GOP state convention to commit itself to equal funding. "As a matter of justice, no less than of wise statesmanship," the party's platform declared in its first plank on state issues, "we hold that the provision now made for the education of colored children should be increased until they are afforded, in their separate schools, facilities of obtaining instruction in every respect equal to those provided for white education." Although faced with a campaign which centered, as all Kentucky campaigns since 1865 had, on racial issues, Republican gubernatorial nominee John Marshall Harlan reiterated this plank in speeches from one end of the state to the other.<sup>7</sup> While the Democratic platform was silent on this, as on all other state issues, the party's candidate for governor, James B. McCreary, denounced the Republican proposal; the Democratic state superintendent of schools dismissed black protests as a mere reflection of a "captious disposition to find fault with everything that is done for them"; and the state's leading "New Departure" Democratic organ urged blacks to show their thanks for finally receiving at least some school money by voting Democratic; otherwise, the paternalistic and comparatively moderate Courier-Journal counseled, the Negroes would prove themselves "a race of pig-headed irreconcilables."<sup>8</sup>

Petitions, speeches, and conventions having left the 1874 law unscathed, the blacks turned to the courts.<sup>9</sup> On November 25, 1881,

a white Paducah attorney, E. W. Bagby, who was chairman of the county GOP committee and a member of the party's state committee, argued the case of Kentucky v. Jesse Ellis in the federal circuit court.<sup>10</sup> Unreported by the West Publishing Co. and consequently virtually unknown heretofore, the case was apparently organized and financed by the very active black community in McCracken county, and was to have profound consequences for the state's educational system.<sup>11</sup> In his argument before federal judges John W. Barr and John Baxter, Bagby challenged the state's right to collect a poll tax for support of Negro schools from Ellis, a black man, when it did not impose such a tax on whites. This, Bagby claimed, was state action in violation of the equal protection clause of the Fourteenth Amendment. More broadly, Bagby averred that the entire system of Kentucky schools supported by racially separate taxes was contrary to the equal protection clause, and the more express provisions of the federal civil rights act, and was therefore wholly unconstitutional.<sup>12</sup> Asserting that his client in this test case could not expect, according to a previous decision in the highest state court, to receive justice, Bagby asked the federal court to take jurisdiction of the matter.<sup>13</sup>

While the Ellis case was pending in federal court, Republicans in the 1881-82 session of the state legislature decided to force the issue more directly. On January 7, 1882, thirty-year-old Hopkinsville attorney and Republican House leader James Breathitt introduced a bill to merge the two school funds, and to equalize the taxes, school terms, and eligible age-groups of whites and blacks immediately, and to submit the question of raising school property taxes by ten mills, which would

have amounted to a 50 percent rise for whites, to a referendum at the time of the August 1882 state elections. Son of a Union army veteran who had been a locally prominent Republican since the War, Breathitt was a fluent speaker who represented a county with the second highest proportion of Negroes (46.2 percent in 1880) in the state. His staunch defense of Negroes' rights to serve on juries and receive equal, though separate educational opportunities and his attacks on such racist measures as an attempt to reestablish the whipping post as a penalty for petty theft, an offense for which whites were seldom convicted, no doubt rather closely represented the views of his county's largely black Republican electorate.<sup>14</sup>

Democrats from similar constituencies sometimes shared the Republicans' views on these issues. On February 7, 1882, James H. Mulligan of Fayette County, which was 44.7 percent Negro, the fourth highest percentage in the state, sought to amend a bill merging the school funds of Greenup County to apply it to the whole state, and on February 11, he introduced a more comprehensive equalization bill. The fact that nearly all the county's Negroes, according to the state's leading Republican newspaper, had backed Mulligan's Republican opponent in the last election seems to have convinced Mulligan to try to expand his base of support, rather than to seek revenge.

Moreover, the counties represented by Breathitt and Mulligan shared another trait which made equalization of state funds attractive. Both were comparatively wealthy -- Fayette had the fifth highest level of white property values per white male adult of the state's 117 counties in 1882 -- and both had high proportions of blacks. Under the

laws then in force, both counties sent a relatively large amount of school tax money to Frankfort, but, because the state funds were distributed on a per capita basis which discriminated against blacks, received much less from the state than they would under a formula which counted each child equally, regardless of race. Thus, not only the black, but also the white constituents of Mulligan and Breathitt stood to gain from state equalization because the change would substantially increase the flow of funds available for consumers to spend in their counties.<sup>15</sup>

As the legislative session dragged on (the Kentucky legislature, unlike those in most Southern states during this period, operated under no constitutional time constraint, but, like many of them, concerned itself primarily with huge numbers of local bills), it appeared that the Breathitt bill might be buried in the education committee, or, after it emerged with no committee recommendation, might be continually postponed.<sup>16</sup> The crucial roll call came on April 10, when by a 37-29 margin, the House voted to postpone the measure until after the legislature's scheduled adjournment date. The Republican Louisville Commercial exploded in wrath:

The conspiracy at Frankfort to defy the Constitution of the United States and precipitate a civil war has not yet been destroyed. Thanks to the density and extent of Bourbon ignorance and its perpetuation in the Legislature, Kentucky is the only State in the Union which has not accepted the war amendments to the Federal constitution. . . . When these antediluvian unteachables placed themselves at Frankfort in

the attitude of implacable hostility to the great cause of equal education, and with barbaric obtuseness refused to recognize the harmonizing and liberalizing and elevating influences of the age which give glory to our common country, they committed the one signal [sic?] crime that was needed to kill and damn them politically.<sup>17</sup>

The legislature's "criminal blunder," the Commercial stated, would insure a gain of "ten thousand votes" for former Lt. Governor Richard T. Jacob, the anti-Bourbon independent candidate for the exceptionally lucrative office of Clerk of the Court of Appeals, which was the only statewide race in Kentucky in 1882. As the chief backer of the independent movement, the Commercial sought to duplicate the success of William Mahone's Virginia Readjusters, break the Democratic monopoly on state offices in Kentucky, and usher in a genuinely competitive two-party system.<sup>18</sup>

But the Commercial underrated the Democracy's talent for survival, just as the Democrats had forgotten the blacks' ability to gain in court what they could not otherwise win in the legislature. For on the same day that it noted the postponement of the Breathitt bill in Frankfort, the Commercial reported Judge Baxter's decision in favor of Jesse Ellis in Paducah. Although he ruled that the whole Kentucky public educational system was, in effect, unconstitutional, Baxter apparently ordered no immediate remedy. His opinion, however, referred to his court's earlier decision in the 1882 Ohio case of U.S. v. Buntin, in which the parent of a black child had sought entrance into a white school. While ruling Ohio school segregation constitutional, the federal circuit judge in Buntin had charged the jury to decide whether

the segregated schools were "equal in the benefits provided . . . ." Otherwise, the judge would have to order the Ohio schools integrated. In the Ellis case, Baxter ruled that ". . . any fund created by the state for educational purposes must be equally and uniformly distributed among both classes, and neither in the raising of the fund by taxation, nor in the distribution of it, must there be any inequality or any discrimination on account of race or color."<sup>19</sup>

The decisions in Ellis and Buntin and the threat, repeatedly expressed in the newspapers by attorney Bagby and openly resolved by a joyous and determined mass meeting of Paducah blacks, to go back to court to seek an appropriate remedy, presented the Democrats in the legislature with three alternatives: equalize, integrate, or close the schools.<sup>20</sup> Since neither of the latter two courses of action promised to be very popular with the voters, the Democratic leaders had little choice but to frame an equalization bill of their own. The real question after the announcement of the Ellis decision, then, was not whether there would be an equalization bill, but what its provisions would be.

While some Democrats and all but one Republican favored a simple bill equalizing the funds per child and raising the school property tax rate sufficiently to prevent a decline in the current level of white expenditures, many Democratic members still opposed any white support for black schools. To prevent a serious Democratic split, House Speaker William C. Owens and his chief lieutenant Clarence U. McElroy proposed a clever compromise. Their bill equalized the funds and raised taxes, but would go into effect only if a majority of the voters approved at the August election. So-called "young Democrats" could therefore appeal

to blacks and nonracist whites by pointing to their votes for equalization; "Bourbons" could satisfy themselves that the voters would disapprove the measure; all could shift the burden of raising taxes to their constituents; and if the measure failed and closure, integration, or chaos followed, why then, it would be the voters, and not the legislators, who would be to blame.

At a Democratic caucus on April 20, most opponents of equalization walked out before a vote could be taken. Of the 109 Democrats in the House and Senate, only fifty were present when the caucus voted 26 to 24 against Mulligan's bill raising white taxes and equalizing the funds without a referendum. After proponents of that measure left, the rump of the caucus endorsed the McElroy-Owens bill, but opinions differed as to whether this nonbinding caucus action -- a majority had to be present to render an endorsement binding -- would be followed by the majority of the Democrats.<sup>21</sup>

The next day, the House considered the McElroy-Owens bill and several amendments. It defeated by 33-51 and 37-48 margins amendments by Breathitt and Mulligan, who sought to equalize the funds without a referendum and raise the white tax rate by three mills and two mills, respectively. Then the body voted 48-30 against a compromise by Democratic Representative A. W. Moremen which would have integrated the funds at once, but allowed a referendum on a two-and-a-half mill tax hike. Finally, the House passed the leadership's measure unamended, 64-18.<sup>22</sup> The Senate on April 22 voted down an amendment providing for a two-mill increase and immediate equalization by a 16-12 count, and then passed the House bill, 26-2.<sup>23</sup>

I have divided the House members into four groups on the basis of the four April 21 roll calls. Because the eight representatives who voted for the Breathitt bill, but against the McElroy-Owens referendum proposal seem to have been outraged at any delay in equalizing the funds that they were willing to kill the one measure which had a chance to pass, I have denominated them "radicals." Next come thirty "liberal" House members who favored both McElroy-Owens and at least one of the substitutes offered by Mulligan, Moremen, and Breathitt. All but three of these men voted for the Breathitt amendment. Thirty-seven "regular" Democrats, one Greenbacker, and one GOP member opposed all the substitutes, but voted for McElroy-Owens.<sup>24</sup> Finally, the eight Democrats and two Greenbackers who opposed any change, despite the danger that the federal court would force integration or suspension of the school system, were so unwilling to budge that they deserve the "Bourbon" appellation.<sup>25</sup>

Party and racial attitude explain many of the legislators' votes. Table 1 shows that all but one of the House Republicans fell into the liberal or radical categories, while Democrats and Greenbackers were much more likely to cluster toward the "Bourbon" end of the scale.<sup>26</sup> If party loyalty and the attitudes which caused them to join the GOP in the first place account for the Republicans' behavior, what explains that of the Democrats? Table 2 cross-classifies groupings among the Democrats on the equalization issue with a February 3 House vote on the bill to reestablish the whipping post for petty theft, a vote which apparently reflected racial attitudes quite closely. The table shows that most of those who favored a return to the antebellum method of punishing blacks opposed equalization, and vice-versa. All but one

Republican who was recorded on the whipping-post issue opposed its reestablishment, while the four Greenbackers split evenly.

[Tables 1 and 2 about here]

But if the Democrats' votes on the equalization issue appear largely to have reflected the racial beliefs of the legislators and their constituencies, what explains variations in those racial attitudes across constituencies? One approach to such questions would be to subdivide the constituencies into various groups on the basis of their scores on certain socioeconomic or political indices and look at the resultant bivariate cross-classification tables. For instance, one might separate rural from urban legislators and see whether those from each demographic group tended to fall into different attitude groups. Then one could repeat the process for other demographic classifications. There are three problems with this method. First, it makes it difficult to discover interactions between two or more independent variables. For instance, those legislators who came from heavily-Negro rural areas might be more conservative in their racial views than all legislators from counties with high percentages of Negroes or all rural solons. Second, the analyst often knows not only that one county was more urban, say, than another, but how much more urban it was, but this "interval level" information is lost if one simply divides the legislators into groups. Third, cross-classification is in effect based on a linear model, but the relationships of interest may not be linear. For instance, a Democratic legislator from a wholly white county might be as willing to ignore Negro voters as one from a county which was 20 percent black; whereas, a representative from a 50 percent Negro county would imperil

his career much more by writing off the black vote than one from a county in which Negroes made up 30 percent of the electorate.

These problems can be remedied by employing logit analysis, one of a group of advanced techniques which have recently been applied to the investigation of multivariate contingency tables.<sup>27</sup> The logit model is based on the so-called "odds ratio." If the odds are six to five that a certain horse will win a race, then the probability that the touts think he will prevail is six-elevenths, or about 54.5 percent. The actual logit equation, whose parameters must be estimated by an iterative computer algorithm unless all the variables are measured at nominal or ordinal levels, is:

$$\ln(p/(1-p)) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + U,$$

where  $p$  is the probability of choosing a certain alternative or falling into a certain group,  $\ln$  indicates that it is the logarithm of the odds ratio which is actually estimated, the betas are parameters, the  $X$ s are independent variables, and the  $U$  is the error term. After estimating the parameters, one may compute the estimated probabilities for various levels of the independent variables.<sup>28</sup> The estimates will be reported in probability form in this paper, and the logit coefficients, which, unlike regression coefficients, have no simple interpretation, will be relegated to an appendix. Since all but one of the Republicans fell into the liberal or radical groups, they will be excluded from the analysis.

The logit technique enables us to ask some interesting kinds of questions about the behavior of the sixty-seven Democratic and Greenbacker House members who were recorded on enough roll calls to



place them in one of the four groups. To what degree did their votes in April represent the feelings of their constituents in the August 1882 referendum? How did the party balance in the legislators' counties affect the representatives' votes on equalization? Were those from overwhelmingly Democratic areas more or less likely to favor it? And how much influence did different characteristics of their counties' socio-economic makeup have on the legislators' actions? Were legislators from relatively heavily black counties more or less likely to take a liberal or radical position than those from virtually all-white counties? How did the variables interact with each other?

In answering these questions, I have the time and space to present only a few of the calculations based on a small proportion of the possible equations which could have been tried. Table 3 contains logit estimates of the probability that a Democratic or Greenbacker legislator would fall into each of the three indicated groups if his county had voted a certain way in the 1880 presidential election.<sup>29</sup> For instance, about 12 percent of the legislators from a hypothetical county where 56.5 percent of the voters backed the Democrats, 8.5 percent the Greenbackers, 34.8 percent the GOP, and 0.2 percent abstained were likely to be radicals or liberals, about 71 percent probably supported only McElroy-Owens, and one in six opposed all change.<sup>30</sup>

The modal category in all but the last row is the "regular" column -- most Democrats followed their leaders. Legislators from heavily Democratic counties (who appear in the first four rows), where racism was presumably more prevalent than elsewhere, were disproportionately likely to be Bourbons, while those who came from counties

where only a third of the electorate was solid for the party of the Confederacy were more likely to be liberals or radicals than Bourbons. Variations in support for the Greenback presidential candidate in 1880 had a very small effect on the likelihood that the county would produce a Bourbon, but a decline in the proportion of votes the Greenbackers received was associated with a rise in the proportion of legislators in the leftward groups.

The table's most fascinating relationship is between Republican strength and Democratic legislative behavior. Increases in the Republican presidential vote were correlated with declines in both Bourbonism and liberalism (compare, for instance, rows one and two, or six and eight). Apparently a relatively strong GOP corralled the Democrats into party regularity; whereas, a weak one left them free to follow their personal or constituency predilections instead of staying with the herd. Although one shouldn't stress these conclusions too much, since they are based on coefficients with rather large standard errors and equations which misclassify too many legislators, it would be interesting to see whether the same pattern of party loyalty and opposition strength held in other states and for other issues.

[Table 3 about here]

As Table 4 shows, the legislators appear to have reflected constituency sentiment fairly closely. Counties which recorded a high level of opposition to the equalization proposal in the August referendum tended to produce a great many fewer racial liberals in the legislature than those in which opposition was muted in August. Those who came from counties where sentiment both for and against equalization was

high in August overwhelmingly supported the McElroy-Owens compromise bill. Perhaps most striking are the last two rows. Representatives of areas where neither supporters or opponents of equalization polled a large vote were more likely to be liberals or radicals than those from counties with any other mix of sentiments, while those from counties where support was tepid and opposition strong were markedly more likely to be Bourbons.<sup>31</sup> Perhaps where their constituents lacked deep feelings on the issue, legislators could avoid the posturing of the Democratic high command and vote for the outcome which the Ellis case had made inevitable. Those from unreconstructed counties had little choice but to try symbolically to save the old regime.

[Table 4 about here]

The three most important demographic correlates of support for the liberal and radical positions, shown in Table 5, were the urban and Negro percentages of each county's population, and the value of white property per white male adult (a proxy for wealth per white family).<sup>32</sup> Urban legislators were more cosmopolitan and perhaps less racially sensitive than their counterparts from the hills and hollows. Such Democratic urban newspapers as the Louisville Courier-Journal and Post, the Paducah Daily News, and the official state Democratic organ, the Frankfort Yeoman, were staunch supporters of equalization, at least after the Ellis decision.<sup>33</sup> City leaders must have realized also that their bailiwicks were prime targets for equalization suits if the legislature delayed, for the eleven urban areas contained about a third of the state's Negro children, and lawyers for the blacks would probably

have sought to end discrimination first where equality would have benefited the greatest number.<sup>34</sup>

[Table 5 about here]

Other things being equal, Democratic legislators from relatively heavily Negro counties were about 22 percent less likely to favor immediate equalization than those from counties which contained few blacks. The repeatedly documented positive relation of white racial attitudes with the threat posed by large proportions of Negroes sufficiently accounts for this finding.<sup>35</sup>

Furthermore, white wealth per white male adult correlated positively with support for instant merging of the school funds. Apparently poor rural Democratic counties were hotbeds of racism, although poor rural Republican counties sent to the legislature representatives who stalwartly supported black equality. It is impossible to resolve this contradiction with the data at hand, but the question deserves further study. None of the other variables had large effects on the Democratic legislators' propensity to favor equalization without a referendum, and the small change produced by the black spending variable was not in the expected direction.

If the results of the analysis of legislature's actions are perhaps somewhat clouded by the ability of such a body to compromise, the referendum called by the McElroy-Owens Act presented the voters with a clearer alternative -- whether to merge the funds and raise the white tax rate to keep the white expenditure per child at approximately the current rate, or refuse any change. As Table 6, which is based on

ordinary least-squares (or OLS) multiple regressions of the percentage of adult males choosing each alternative, indicates, most Republicans and Greenbackers voted as their legislators had, and the Democrats split, a majority of their 1879 and 1880 partisans opposing the reform, while a majority of those who voted for the Democratic candidate for Clerk of the Courts of Appeals supported the measure.

[Table 6 about here]

Yet since Kentucky, unlike most other Southern states, had several large cities, the equations which form the basis of Table 6 may give misleading results.<sup>36</sup> Population disparities between counties are taken into account in Table 7, which is based on the technique of generalized least-squares (or GLS). The results are similar to those in Table 6, but indicate that much larger percentages of the Republicans supported, and considerably higher proportions of the Democrats and Greenbackers opposed equalization than Table 6 had implied. In fact, the row showing how the 1880 Greenbackers voted in 1882 contains two logically inadmissible estimates, as does the row following it.

Such estimates, which are fairly common in this type of analysis, can be dealt with by reestimating the equations and assuming, say, that the Greenbackers all voted against equalization and that the 1880 abstainers all abstained in 1882, or by ignoring the logical discrepancies and merely stating that the results mean that nearly all Greenbackers opposed the change and few 1880 abstainers voted. But there is a third alternative. Since the problem arises because one is using an unconstrained linear model, one might employ a nonlinear model,

such as logit, which allows no estimates to fall outside the 0-100 percent logical bounds.<sup>37</sup>

[Table 7 about here]

The results presented in Table 8, which is based on a logit model, are much more esthetically and substantively satisfying than those in Table 7. There are no more logically impossible estimates, and the 1882 behavior of those who did not vote in 1880 is not so unrealistically extreme. Since 1880 is the temporally closest election to the 1882 referendum which witnessed a high turnout and a straight party fight -- some Democrats and many Greenbackers appear to have joined the 1882 Jacob movement, while the state's only Republican Congressman and several other state GOP leaders pointedly refused to endorse the Union Democrat -- it is the best measure of how the masses of partisans voted.<sup>38</sup> The Republicans, white and black, voted six to one for (segregated) racial equality, the Democrats two to one against, and the Greenbackers eighteen to one against.<sup>39</sup> Democratic overtures to the blacks were a bit more than rhetoric, but not much; whereas the Republicans, while refusing to press for integration, which would have been suicidal, as well as completely ineffective, in the state at that time, overwhelmingly supported the largest practicable step toward black equality.

[Table 8 about here]

The final table presents logit coefficients masquerading as regression coefficients, partly to reduce the table's complexity and partly to demonstrate another guise of the malleable technique. The

numbers in the table hold only for the roughly linear portions of the logarithmic relationships. In this table, I have included both political and socioeconomic variables in an attempt to separate out the effects of political philosophy and behavior from those of demographic traits. The figures show the 1880 Democrats and Greenbackers in a light rather more favorable to modern tastes, but only underline the exceptionally liberal behavior of the party of Abraham Lincoln and John Marshall Harlan. As in the legislative analysis, a rise in the percentage of Negroes in a county provided a significant push toward Bourbonism. Since newspaper reports of the election indicate that blacks overwhelmingly backed equalization, whites in the heavily black counties must have almost unanimously opposed it. Other things being equal, urbanites were barely more likely than their country cousins to vote "yes" in the election, but markedly less likely to vote "no." Roman Catholics, who often sent their children to parochial schools in Kentucky at this time, appear to have been a bit less favorable to a tax increase for the public schools than Protestants. None of the other variables had very large impacts on the referendum voting.

[Table 9 about here]

In his Jefferson lectures on racial equality in America, John Hope Franklin stated that ". . . the position of freedmen in the postwar South was scarcely better than that of free blacks in the antebellum period. . . . The Reconstruction years were marked by halfhearted, lighthearted, inconclusive steps taken by the state and federal governments to introduce a semblance of racial equality in America. The feeble effort was an abject failure. . . . There were few voices

raised anywhere against the far-reaching [post-Reconstruction] program looking to the degradation and humiliation of blacks everywhere. . . . the emancipation of the slaves had no discernible effect on the movement for racial equality." In a similarly pessimistic vein, another prominent Afro-American historian, the former editor of the Journal of Negro History, W. Augustus Low, recently asserted that "As in the Deep South, public education for the Negro in Kentucky was virtually nonexistent until after the turn of the century."<sup>40</sup>

The analysis presented in this paper, as well as the more extensive efforts of other scholars, belies the statements of Franklin and Low.<sup>41</sup> Kentucky blacks used the political power granted by the Fifteenth Amendment and the legal weapons preserved in the Fourteenth Amendment to guarantee their children an equal share in educational spending in Kentucky, at least at the state level.<sup>42</sup> If their schools were poor, they were not, after 1882, appreciably worse than those for whites in the Bluegrass state.

In their struggle to eliminate the grosser forms of racial inequality, moreover, the blacks succeeded only with the assistance of sympathetic whites. E. W. Bagby skillfully argued the Ellis case, obtaining a favorable result from two Southern white Republican federal judges, John Baxter of North Carolina and Tennessee and John W. Barr of Kentucky.<sup>43</sup> James Breathitt, a native white Kentucky Republican, was the chief proponent of equalization in the legislature. The great mass of Republican voters staunchly backed the merging of funds in the referendum. In fact, Southern white Republican support of measures upholding black equality and repelling attempts to increase discrimi-

nation, while by no means universal, was common enough to suggest the propriety of their inclusion on C. Vann Woodward's list of the forces restraining the South's "capitulation to extreme racism" in the late nineteenth century.<sup>44</sup>

A substantially smaller number of Southern Democrats, especially those from affluent urban areas and from counties which had few blacks, also stood up for equalization. Counties with strong Republican movements tended to produce "regular" Democrats, while counties in which the GOP was weak sent to the legislature disproportionate numbers of both liberals and reactionaries. But the vast bulk of that party's legislators in 1882 opposed equal spending until the Ellis case made it a fait accompli, and some continued to protest against the inevitable even then. Furthermore, in the August referendum, about two-thirds of the Democrats who voted seem to have deserved the "Bourbon" label attached to them by scornful Republicans.

Finally, it should be noted that these substantive conclusions could be reached only because of the availability of sophisticated quantitative techniques, specifically logit analysis. The usefulness of that technique not only in disentangling the correlates of legislative behavior, but also in allowing logically satisfactory estimates of voters' behavior should stimulate more historians to employ it.<sup>45</sup>

# FOOTNOTES

1. Referendum returns from Frankfort Tri-Weekly Yeoman, Oct. 12, 1882; school statistics and quotation from Kentucky Common Schools Report (1884-86), 106-107.
2. Victor B. Howard's "The Struggle for Equal Education in Kentucky, 1866-1884," Journal of Negro Education 46 (1977), 305-28, covers some of the same events analyzed herein, but is silent on the political struggles involved, includes no statistical analysis, and is misleading on several points.
3. On the border state systems, see Kentucky Common School Report (1880-81), 236; Harold B. Hancock, "Reconstruction in Delaware," in Richard O. Curry, ed., Radicalism, Racism, and Party Realignment: The Border States During Reconstruction (Baltimore: The Johns Hopkins Press, 1969), 207, 214. The system of separate taxation and allocation in these states was nationally notorious. See, e.g., John Eaton, Jr., (U.S. Commissioner of Education) to Thomas W. Conway in Louisiana Schools Report (1872), 57-58; and a report of the National Education Assembly meeting in 1882 in Cincinnati Commercial, Aug. 28, 1882. For the actions of Johnsonian Reconstruction governments, which indicate how an unconstrained white South would have treated the blacks, see Thomas Everette Cochran,

History of Public School Education in Florida (Lancaster, Pa.: The New Era Printing Co., 1921), 29-30; William Riley Davis, The Development and Present Status of Negro Education in East Texas (New York: Teachers' College, 1934), 10-11.

4. The quotation is from Hambleton Tapp, "Three Decades of Kentucky Politics, 1870-1900," (unpublished Ph.D. thesis, University of Kentucky, 1950), 45-46. Other information is from Thomas Cavin Venable, "A History of Negro Education in Kentucky," (unpublished Ph.D. thesis, George Peabody College for Teachers, 1952), 70-79; Moses Edward Ligon, A History of Public Education in Kentucky (Lexington: University of Kentucky Press, 1942), 245-47; Gilbert Thomas Stephenson, Race Distinctions in American Law (reprint ed., New York: Negro Universities Press, 1969), 196-99. For the effect of proposed federal aid law, see Kentucky Common Schools Report (1879), 196.
5. For the provisions of the law, see Louisville Commercial, Dec. 12, 1881; for the statistics, Kentucky Common Schools Report (1884-86), 146-47; for the expectation of federal aid, Kentucky Common Schools Report (1879), 89-99. For vehement Republican opposition to the bill and a Republican attempt in the 1873-74 legislative session to enact equal funding for black and white schools, see Kentucky Senate Journal (1873-74), 325-26, 396-98, 457, 478-84, 769; Kentucky House Journal (1873-74), 756-63; speech of GOP Attorney-General nominee William Cassius Goodloe, in Louisville Commercial, July 30, 1875.

6. "Kentucky State Colored Educational Convention Held at Benson's Theater, Louisville, Kentucky, July 14, 1869," (undated pamphlet in Library of Congress), 17; Lexington American Citizen, Nov. 13, 1875; Louisville Commercial, Nov. 12, 1875.
7. The platform and typical Harlan speeches are in Louisville Commercial, May 14, June 19, July 13, 1875. The estimate of the racial composition of the GOP in Kentucky, which probably overstated the number of white Republicans for obvious reasons is in ibid., February 8, 1882. Although the 1871 Republican platform contained no such explicit provision, it did denounce the Democrats for failing to make "adequate provision" for Negro schools and several GOP candidates endorsed complete equalization during that campaign. See ibid., July 22, 27, Aug. 2, 4, 1871. 1871 Democratic gubernatorial candidate P. H. Leslie, by contrast, opposed "dividing the school fund with the nigger," and called for repeal of the Thirteenth, Fourteenth, and Fifteenth Amendments, and the Democracy's candidate for state school superintendent, H. A. M. Henderson, favored abandoning the public schools entirely if the only alternative was dividing the white fund. Ibid., June 3, 30, 1871.
8. Louisville Courier-Journal, July 28, 30, 1875; Kentucky Common Schools Report (1874), 29; (1875), 107; (1876), 21; quotation from 1875 report.

9. On black and Republican activities in favor of equalization between 1875 and 1881, see Tapp, "Kentucky Politics," 144, 180, 228.
10. The case was first filed in McCracken county court, but I have not found details on that phase of it. Bagby's attempt to transfer it to the federal court obviously reflected his view that a favorable decision was more likely to come speedily there, a belief buttressed not only by provisions of the 1875 Civil Rights Act, but also by the U.S. Supreme Court's recent opinions in three jury trial cases, Strauder v. W. Va., 100 U.S. 303 (1880); Virginia v. Rives, 100 U.S. 313 (1880); Ex parte Virginia, 100 U.S. 339 (1880). On Bagby see Paducah Daily News, Feb. 25, March 18, May 13, 1882; Louisville Commercial, Aug. 11, 1882. The Commercial, Dec. 12, 1881 published Bagby's federal court brief in full.
11. For an indication of the extent of black organization and activity in Paducah, see Paducah Daily News, April 18, 1882.
12. Section 1977 of the U.S. Revised Statutes then in effect expressly prohibited racially unequal taxation. (The U.S. Supreme Court's decision in The Civil Rights Cases, 109 U.S. 3, which declared much of the 1875 Civil Rights Act unconstitutional, was not issued until 1883.)
13. In the 1874 case of Marshall v. Donovan, 73 Ky. 681, the Kentucky Court of Appeals ruled that education was not a "privilege or

immunity" inuring to blacks as citizens of the U.S., that therefore discrimination in taxing and spending for education was not prohibited by the Fourteenth Amendment, and that whatever guarantees of Negro rights to the Fourteenth Amendment contained could be put into effect only by the legislature, not the courts. Since one of Marshall's lawyers was a prominent leader of the state's Republican party, James Speed, and since the challenge to racial discrimination was somewhat extraneous (Marshall was white), it is possible that Marshall, too, was a test case. If it was, it was certainly a poor choice, since the court could easily have dismissed Marshall's equal protection argument, since he was not black. And because Marshall was not pursued until seven years had elapsed it is difficult to believe that it was part of a concerted strategy or had anything to do with Ellis, as Howard, "Struggle for Equal Education," 320-322, implies. In any event, the Marshall precedent seemed to preclude a successful challenge to the 1874 law in the state's courts. (After Ellis, but without referring to it, the Kentucky Appeals Court appeared to reverse Marshall implicitly in Dawson v. Lee, 83 Ky. 49).

Breathitt's position of leadership is demonstrated by the fact that it was he who bestowed the complimentary Republican nomination for U.S. Senate upon the state's only Republican congressman, John D. White. On Breathitt, see William Elsey Connelley and E. Merton Coulter, History of Kentucky (Chicago and New York: The American Historical Society, 1922), IV, 102-13; Louisville Commercial, Dec. 7, 1881, March 24, 1882. For the introduction and provisions of his

bill, see Louisville Commercial, Jan. 9, Feb. 14, April 11, June 9, 1882; Louisville Courier-Journal, April 12. For his actions on Negro rights and extensive reports of his speeches, see Louisville Commercial, Jan. 10, 21, April 24, 1882. On the racist nature of arguments for the whipping post bill, see Richmond Kentucky Register, Dec. 16, 1882, in which that Democratic paper stated that "the petty thieves of the State are nearly all [N]egroes. . . ."

15. On this Mulligan amendment, see Richmond Kentucky Register, Feb. 10, 1882; Louisville Commercial, Feb. 8, 9, 1882. The Feb. 8 Commercial outlined the argument that Fayette County would gain funds from equalization. The wealth and educational statistics here and throughout this paper are taken from the relevant printed reports of the state auditor and superintendent of public instruction. "Judge" Mulligan, who was Irish, was a prominent anti-Mormon, a position usually associated with "pietistic" Protestants, rather than "liturgical" Catholics. See Louisville Commercial, Feb. 10, 1882.
16. See Louisville Commercial, March 2, 17, 1882; Louisville Courier-Journal, March 29, April 1, 1882; Kentucky State Journal (1881-82), 798.
17. Louisville Commercial, April 12, 13, 1882. Similarly, though not so vituperatively, see Louisville Bulletin (Negro) and Indianapolis Journal, quoted in ibid., April 15, 1882; Cleveland Leader (black),

quoted in Louisville Courier-Journal, March 10, 1882; New York Tribune, quoted in ibid., April 18, 1882, and accompanying editorial in ibid., same date. The Democratic Courier-Journal, which opposed the Breathitt bill, though it favored equalization, expected the legislative to pass some sort of equalization bill before adjournment. See the April 12, 1882 issue.

18. Louisville Commercial, April 11, 12, 1882. The fees of the office reportedly amounted to \$80,000-\$100,000 per year, and the clerk himself apparently cleared about \$25,000, which was five times as high as the governor's salary.
19. Louisville Commercial, April 11, 1882. Bagby had not asked for any specific remedy. See Paducah Daily News, Feb. 29, 1882. Though the case was apparently decided on April 4, the news seems to have taken a week to travel from Paducah to Louisville, and one day longer to get to Frankfort. U.S. v. Buntin, 10 Fed. Rep. 730. The quotations in the Buntin and Ellis cases were taken from Louisville Commercial, April 11, 1882.
20. For Bagby's threats, see Louisville Commercial, April 11, 18, 1882. For the Paducah mass meeting, see Louisville Commercial, April 20, 1882. For Democratic fears of the effect of Ellis, see Louisville Courier-Journal, April 14, 1882. "It may be well enough," Bagby contended in the April 18 Commercial, which was widely read by Democrats in the legislature, "to let the Democratic party in



Kentucky know, right here, that the petty, vexing tyranny of such legislation will not be longer tolerated in this State. If the school fund for the education of the common school children of the State is not equalized by this Legislature, then the proper officers whose duty it is to collect and distribute the fund will be forced, by legal process, to distribute it, pro rata, among all the pupil children of the Commonwealth. There will be a meeting of leading colored citizens in this city [Paducah] within a few days, who will take into consideration the measures necessary to secure this result."

21. For reports of the caucus, see Louisville Courier-Journal, April 21, 1882. For the authorship of the bill and McElroy's position as Owens's lieutenant, see ibid., June 9, 1882 and Louisville Post, May 4, 1882.
22. Kentucky House Journal (1881-82), 1578-1582.
23. Kentucky Senate Journal (1881-82), 1170-1176.
24. The party designations of the legislators were given in Louisville Commercial, Nov. 7, 1881.
25. There are hints that the structure of attitudes on the issues related to equalization was more complex than treated here. It is clear that the votes do not fall into a simple unidimensional Guttman scale, since the "radicals" joined the "Bourbons" in voting against McElroy-Owens. It appears that the votes tapped at least

three dimensions: attitudes toward parties, toward tax increases, and toward equalization. Thus, some quite racist Democrats no doubt favored McElroy-Owens only because the leadership convinced them that the measure was necessary for the party's welfare, that since the court was going to order equalization anyway, the Democracy might as well take credit for it. And other Democrats acted as if they had a preferred level ("bliss point") of tax increases. Whereas, Breathitt and the Republicans felt it a propitious time for hiking taxes by 50 percent, some Democrats would stand for a 10 percent, but not a 15 percent increase. Unfortunately, there were too few roll calls to allow us to distinguish these attitudes mathematically through some multi-dimensional scaling or cohesion procedure, and the compromise McElroy-Owens bill conflated several dimensions -- precisely as it was meant to do. Anytime there is competent leadership in a legislature, there will be logrolling, which will result in the passage of legislation, but impede an analyst who mechanically applies scaling algorithms without really knowing how the key legislators have shaped the agenda. The crucial roles played by a few leaders who usually dominate the largely incompetent masses of state legislators, the high probability that the crafty logrolls they shape will often foul up fancy mathematical procedures, and the fact that most roll calls in state legislatures, at least in the nineteenth century, concerned utterly trivial questions all serve to undercut the unthinking use of sophisticated procedures and render simple commonsensical ones usually superior for scaling the attitudes of legislators.

26. It is unclear what interest the Greenbackers had in "Bourbon" policies, but that party's greatest strength was in the extreme western end of the state, which had been the chief hotbed of Confederate sentiment during the War. All four Greenbacker legislators came from this area. Perhaps racist sentiments were stronger there, although the proportion of Negroes in that section was lower than in the bluegrass area. Or perhaps western Kentucky had gone with the Confederacy because it had had fewer economic ties with the north and more with the south than other areas in the state, and residual antipathy to the party of the Union pushed them into Bourbonism. For the division in wartime sentiments, see Ross A. Webb, "Kentucky: 'Pariah Among the Elect,'" in Richard O. Curry, ed., Radicalism, Racism, and Party Realignment, 109.

27. See Yvonne M. M. Bishop, Stephen E. Feinberg, and Paul W. Holland, Discrete Multivariate Analysis: Theory and Practice (Cambridge, Mass.: MIT Press, 1975), and David K. Hildebrand, James D. Laing, and Howard Rosenthal, Prediction Analysis of Cross Classifications (New York: John Wiley and Sons, 1977).

28. To compute the probability of voting "yes" for a legislator from an average county in an either/or vote with abstainers excluded, for example, the equation becomes:

$$p(\text{yes}) = \exp(\beta' \bar{X}) / (1 + \exp(\beta' \bar{X})),$$

where exp is the exponential function,  $\beta'$  a transposed vector of

parameters (previously estimated by computer), and  $\bar{X}$  a vector of the means of the independent variables. Formulas for a larger number of alternatives and different combinations of variables are messier, but can be evaluated with a hand calculator which has slide-rule functions.

29. Since only four Democrats fell into the radical category, I have consolidated it with the liberal category here to decrease the errors in estimation.

30. These particular percentages were chosen because they were one standard deviation above the mean (except for the abstainers). The means of the party percentages for the counties from which the legislators came are given in the fifth row of the table. I have computed the probabilities for levels of the independent variables at their means and  $\pm$  one standard deviation in Tables 4 and 5 also.

31. The northwest-southeast trend of the table would be much more pronounced, of course, if I could have included legislative Republicans. Since only one Republican fell into the regular or Bourbon categories, however, those cell entries were nearly empty, and the computer algorithm would not converge to give a solution to the equation which included legislators from that party.

32. The groupings have been collapsed into two categories here in order to improve the reliability of the logit coefficients.

33. Courier-Journal editor Henry Watterson had been courting the black vote in Kentucky and the nation for years, and fervently wished to dispel the Southern Democrats' reactionary social image at a time when the "newer departure" Democracy seemed to be attracting Negro support. On the "newer departure," see Lawrence Grossman, The Democratic Party and the Negro: Northern and National Politics, 1868-92 (Urbana, Ill.: University of Illinois Press, 1976). For editorials supporting equalization, see Louisville Courier-Journal, Jan. 12, Feb. 17, April 12, July 28, Aug. 2, 1882; Louisville Post, Aug. 5, 1882; Paducah Daily News, June 20, 22, 1882; Richmond Kentucky Weekly Register, July 28, 1882; Frankfort Daily Yeoman, April 19, July 29, 1882. Thirty-nine percent of the black children in the state in 1882 lived in the eleven counties containing towns of over 4000 population.
34. There were more good lawyers in urban than rural areas, and the comparative anonymity of the each citizen in a large town or city would allow counsel who aspired to political power to escape the lasting pariahdom they might have courted by standing up for black rights in a hamlet where everyone knows everyone else and nobody every forgets. For a threat by Louisville black leader Dr. Fitzbutler to file a suit to force that city to equalize its schools, see Louisville Commercial, June 14, 1882.
35. See, e.g., Hubert M. Blalock, Toward a Theory of Minority Group Relations (New York: G. P. Putnam's Sons, 1970).

36. See Appendix A for a further discussion of GLS.
37. See Appendix B for further discussion of the logit model.
38. Though the Democratic Louisville Post endorsed the 1882 Independent campaign, both my OLS and GLS estimates show no voters who supported Winfield Scott Hancock in 1880 backing Jacob in 1882. The estimates do show, however, that from 7 to 19 percent of the Garfield supporters backed the Democratic candidate for Appeals Court Clerk, while about 95 percent of those who voted the Greenback ticket for James B. Weaver and turned out in 1882 seem to have favored Jacob. For the Post endorsement, see the issue of June 7, 1882. For the GOP split, see Louisville Commercial, June 19, July 25, 1882. Many Negroes and other Republicans could not forget Jacob's leadership of the racist "Conservative Unionist" party in 1867-68. See Webb, "'Pariah Among the Elect,'" 117, 120, 123.
39. Some blacks opposed the equalization measure because it mandated segregated schools, but numerous black gatherings throughout the state endorsed it. See Louisville Commercial May 17, 22, 29, June 1, 5, 10, 15, 1882; Richmond Kentucky Weekly Register, June 9, 1882.
40. Franklin, Racial Equality in America (Chicago: University of Chicago Press, 1976), 60-62, 72; Low, "The Freedman's Bureau in the Border States," in Curry, Radicalism, Racism, and Party Realignment, 253.

41. Although a tremendous number of examples could be cited, one might start with Howard N. Rabinowitz, Race Relations in the Urban South, 1865-1890 (New York: Oxford University Press, 1978).
42. Separate taxation and expenditure systems persisted in scattered areas until 1936, but there was apparently much less discrimination against the vast majority of Negro children in Kentucky than against those in states further South. See Leonard Ephraim Meece, Negro Education in Kentucky: A Comparative Study of White and Negro Education on the Elementary and Secondary School Levels (Lexington, Ky.: University of Kentucky Press, 1938), 21-22, 60, 105, 118-19.
43. On Barr and Baxter, see Harold Chase et al., Biographical Dictionary of the Federal Judiciary (Detroit: Gale Research Co., 1976), 15, 17.
44. C. Vann Woodward's list in The Strange Career of Jim Crow, 3d revised ed. (New York: Oxford University Press, 1974), 44-64 contains neither blacks nor white Southern Republicans.
45. Logit and probit can also be used in cases where the dependent variable is nominal. For example, it could be employed to determine the correlates of moving or staying in analyses of social or geographic mobility.

TABLE 1  
PARTY AND GROUPINGS ON EQUALIZATION BILLS

Group	Party		
	Democrat	Republican	Greenback
Bourbons	8	0	2
Regulars	37	1	1
Liberals	15	15	0
Radicals	4	4	0
Abstained or Insufficient votes	10	2	1
Chi-Square = 36.58 (P < .001)			

TABLE 2  
GROUPINGS ON EQUALIZATION AND VOTES ON  
WHIPPING POST BILL (Democrats Only)

Group on Equalization	Whipping Post Bill		
	For	Against	Abstain
Bourbons	7	0	1
Regulars	23	5	9
Liberals	4	10	1
Radicals	1	3	0
Abstain	3	4	2
Chi-Square = 24.28 (P < .001)			

TABLE 3  
LOGIT ESTIMATES OF RELATIONSHIP BETWEEN COUNTY VOTES  
IN 1880 PRESIDENTIAL ELECTION AND LEGISLATIVE GROUPINGS  
ON EQUALIZATION IN 1882 LEGISLATURE

County Vote in 1880 Election				Predicted Percentage of Legislators in Group		
Dem.	Grbk.	Repub.	Abstain	Rad.-Lib.	Reg.	Bourbon
.565	.085	.348	.002	.122	.712	.166
.565	.085	.172	.178	.187	.578	.235
.565	-0-	.348	.087	.154	.682	.164
.565	-0-	.172	.263	.231	.543	.226
.444	.031	.260	.265	.270	.583	.147
.323	.085	.348	.244	.288	.617	.095
.323	-0-	.348	.329	.347	.565	.088
.323	.085	.172	.420	.411	.466	.123
.323	-0-	.172	.505	.478	.410	.112
Actual percent in each group . . . . .				.284	.567	.149
Percent of legislators correctly placed in groups = .627						

TABLE 4

LOGIT ESTIMATES OF RELATIONSHIP BETWEEN COUNTY VOTES  
IN AUGUST, 1882 REFERENDUM ON EQUALIZATION AND LEGISLATIVE  
GROUPINGS ON EQUALIZATION IN 1882

Vote in Referendum			Predicted Percent of Legislature			
For	Against	Abstain	Rad.	Lib.	Reg.	Bourbon
.430	.131	.439	.021	.348	.514	.117
.430	.377	.193	.026	.037	.844	.093
.315	.254	.431	.064	.175	.614	.147
.200	.131	.669	.150	.495	.269	.086
.200	.377	.423	.052	.074	.619	.255

Percent of legislators correctly placed in groups = .621

TABLE 5

LOGIT ESTIMATES OF RELATIONSHIP BETWEEN SOCIOECONOMIC  
VARIABLES AND LEGISLATIVE GROUPINGS ON EQUALIZATION<sup>1</sup>

Socioeconomic Indicators <sup>2</sup>							Predicted % Liberal- Radical
%Negro	%Roman	%Urban	%Undem	Bspend	Wtax	Wval	
.152	.089	.161	-.179	1.245	.517	1322.44	.228
.035				1.850			.333
.269				1.850			.106
.035				.640			.427
.269				.640			.179
.035	.279						.299
.035	-0-						.321
.269	.279						.111
.269	-0-						.122
		.457				2212.56	.378
		.457				432.32	.109
		-0-				2212.56	.092
		-0-				432.32	.020
.035		.457					.636
.269		.457					.339
.269		-0-					.225
.035		-0-					.079
.035						2212.56	.549
.035						432.32	.198
.269						2212.56	.263
.269						432.32	.067

Percent of legislators correctly placed in groups = .806

## NOTES to TABLE 5

1. %NEGRO is the percentage of registered voters in 1882 who were Negroes. Since registrars were paid to register voters, this was virtually the same as the percentage of adult males who were Negroes.  
 %ROMAN is the percentage of total church property owned by the Roman Catholic Church. No church membership figures exist for this period to my knowledge.  
 %URBAN is the percentage in towns and cities over 4,000, taken from the 1880 U. S. Census of population.  
 %UNDEM is an estimate of the percentage of former Unionists (as opposed to Confederates) who normally voted Democratic. It was formed by subtracting the Republican vote in the 1879 Governor's race from the percentage for the independent (former Unionist) Jacob in the 1882 Court of Appeals race.  
 BSPEND is the increase in spending for black schools in each county from 1882 to 1883 divided by the number of white male adults.  
 WTAX is the increase in white property taxes from 1882 to 1883 divided by the number of white male adults.  
 WVAL is the value of white property in 1882 divided by the number of white male adults. All variables except the %URBAN and %UNDEM come from the report of the state auditor for 1883.
2. To decrease the complexity of the table, blanks have been left instead of inserting the means of the variables being held constant in each row.

TABLE 6

UNWEIGHTED OLS ESTIMATES OF RELATIONSHIPS BETWEEN  
 VOTES IN 1879 GUBERNATORIAL, 1880 PRESIDENTIAL, AND  
 1882 COURT OF APPEALS RACES AND VOTES IN 1882 REFERENDUM

<u>1879 Governor</u>	<u>1882 Referendum</u>		
	<u>For</u>	<u>Against</u>	<u>Abstain</u>
Dem.	36	41	23
Repub.	53	16	31
Abstain	12	29	59

<u>1880 President</u>	<u>1882 Referendum</u>		
	<u>For</u>	<u>Against</u>	<u>Abstain</u>
Dem.	34	37	28
Repub.	52	15	32
Grbk.	17	64	19
Abstain	3	32	65

<u>1882 Appeals Court</u>	<u>1882 Referendum</u>		
	<u>For</u>	<u>Against</u>	<u>Abstain</u>
Dem.	53	35	12
Ind.	48	19	40
Abstain	10	32	58

TABLE 7

GENERALIZED LEAST SQUARES ESTIMATES OF RELATIONSHIPS BETWEEN  
VOTES IN 1879 GOVERNOR'S, 1880 PRESIDENTIAL, AND 1882 APPEALS  
COURT RACES AND VOTES IN 1882 EQUALIZATION REFERENDUM<sup>1</sup>

<u>1879 Governor</u>	<u>1882 Referendum</u>		
	<u>For</u>	<u>Against</u>	<u>Abstain</u>
Dem.	36	51	13
Repub.	64	15	21
Abstain	11	13	76

<u>1880 President</u>	<u>1882 Referendum</u>		
	<u>For</u>	<u>Against</u>	<u>Abstain</u>
Dem.	31	51	18
Repub.	68	4	28
Grbk.	30	117	- 47
Abstain	- 8	4	104

<u>1882 Appeals Court</u>	<u>1882 Referendum</u>		
	<u>For</u>	<u>Against</u>	<u>Abstain</u>
Dem.	55	37	7
Ind.	41	23	36
Abstain	10	22	68

1. The estimating equations were of the following form:

$$Y/\sqrt{N} = \sqrt{N} \beta_0 + \beta_1 X_1/\sqrt{N} + \beta_2 X_2 \sqrt{N} + U,$$

where  $\sqrt{N}$  is the square root of the adult male population in each county.

TABLE 8

LOGIT ESTIMATES OF RELATIONSHIP BETWEEN  
1880 PRESIDENTIAL RACE AND 1882 REFERENDUM

<u>1880 President</u>	<u>1882 Referendum</u>		
	<u>For</u>	<u>Against</u>	<u>Abstain</u>
Dem.	25	51	24
Repub.	60	10	30
Grbk.	5	91	4
Abstain	10	11	79



TABLE 9

LOGIT ESTIMATES OF CHANGE IN VOTES IN REFERENDUM FOR  
INCREASES IN POLITICAL AND SOCIOECONOMIC VARIABLES OF ONE PERCENT<sup>1</sup>

Independent Variable	Change in voting in referendum		
	For	Against	Abstain
%Dem., 1880 President	.176	- .008	- .168
%Rep., 1880 President	.598	- .406	- .192
%Grbk., 1880 President	.264	- .028	- .236
%Negro	- .173	.257	- .084
%Urban	.015	- .194	.180
%Roman	- .093	- .006	.099
Wval (in \$1000's)	.003	.010	- .013
Wtax	.003	.019	- .016
Bspend	- .008	.047	- .039
Undem	- .078	- .047	.031

1. The relationships hold only between  $\pm$  one standard deviation from the mean of the independent variables, and can be interpreted as giving the change in the dependent variables for a 1% change in the relevant independent variable, holding all other independent variables constant.

# APPENDIX A

The variance of the error term in a regression based on data aggregated over geographical units which differ widely in population is not constant, yet OLS assumes that variance is constant. We can partially remedy the situation, however, if we first recognize why the error variance is not constant.

Suppose one is interested in how individuals vote. Then for each individual, we can estimate a probability that he will vote, say, Democratic, given certain traits, by an equation such as:

$$(1) \quad Y_{ij} = \beta'X_{ij} + U_{ij},$$

where the  $i$  subscript refers to counties, the  $j$  subscript to individuals, the  $Y$  is a vector of voter choices, the  $X$  a matrix of traits or independent variables, and the  $U$  a vector of error terms with expected value zero.

The variance of the error term is

$$(2) \quad \text{Var}(U_{ij}) = E(U_{ij})^2 = E(Y_{ij} - \beta'X_{ij})^2,$$

which is assumed in regression to be constant.

Unfortunately, we observe data only on the county, not the individual level, so that equation (1) becomes:

$$(3) \quad \sum_{i=1}^{N_i} Y_{ij} / N_i = \beta' \sum_{i=1}^{N_i} X_{ij} / N_i + \sum_{i=1}^{N_i} U_{ij} / N_i,$$

where the  $N_i$ s refer to the number of people in county  $i$ , and the summations are across all individuals in each county.

The variance of the error term here is:

$$(4) \quad E \left( \frac{\sum_{i=1}^{N_i} U_{ij}}{N_i} \right)^2 = E \left( \frac{\sum_{i=1}^{N_i} Y_{ij}}{N_i} - \beta \frac{\sum_{i=1}^{N_i} X_{ij}}{N_i} \right)^2.$$

Since the errors are assumed to be independent across all individuals, the expectation for each county of the square of the errors is equal to the sum of the expectation of the errors squared, or

$$(5) \quad E \left( \frac{\sum_{i=1}^{N_i} U_{ij}}{N_i} \right)^2 = \sum_{i=1}^{N_i} E \left( \frac{U_{ij}}{N_i} \right)^2 = N_i E \left( \frac{U_{ij}}{N_i} \right)^2.$$

And since the  $N_i$  in the denominator is a constant, its expected value is just itself, so we have

$$(6) \quad E \left( \frac{\sum_{i=1}^{N_i} U_{ij}}{N_i} \right)^2 = \frac{N_i}{N_i^2} E \left( U_{ij} \right)^2 = \frac{1}{N_i} E \left( U_{ij} \right)^2 = \frac{1}{N_i} E \left( Y_{ij} - \beta X_{ij} \right)^2$$

which differs from (2) by the factor of  $1/N_i$ .

To correct for this divergence, we multiply the whole equation through by  $\sqrt{N_i}$ , or the square root of the population in each county, giving us:

$$(7) \quad \sqrt{N_i} \left( \frac{\sum_{i=1}^{N_i} Y_{ij}}{N_i} \right) = \beta \left( \sqrt{N_i} \frac{\sum_{i=1}^{N_i} X_{ij}}{N_i} \right) + \sqrt{N_i} \frac{\sum_{i=1}^{N_i} U_{ij}}{N_i}$$

which reduces to

$$(8) \quad \frac{\sum_{i=1}^{N_i} Y_{ij}}{\sqrt{N_i}} = \beta \frac{\sum_{i=1}^{N_i} X_{ij}}{\sqrt{N_i}} + \frac{\sum_{i=1}^{N_i} U_{ij}}{\sqrt{N_i}}.$$

And the error variance is

$$(9) \quad E \left( \frac{\sum_{i=1}^{N_i} U_{ij}}{\sqrt{N_i}} \right)^2 = E \left( \frac{\sum_{i=1}^{N_i} Y_{ij}}{\sqrt{N_i}} - \beta \frac{\sum_{i=1}^{N_i} X_{ij}}{\sqrt{N_i}} \right)^2.$$

By the same arguments as stated earlier, we can take the sums and constants outside the expectations, giving us

$$(10) \quad \frac{1}{N_i} \sum_{i=1}^{N_i} E \left( U_{ij} \right)^2 = \frac{1}{N_i} \sum_{i=1}^{N_i} E \left( Y_{ij} - \beta X_{ij} \right)^2,$$

and the sums on both sides are equal to  $N_{ij}$ , giving us finally

$$(11) \quad \frac{N_i}{N_i} E \left( U_{ij} \right)^2 = \frac{N_i}{N_i} E \left( Y_{ij} - \beta X_{ij} \right)^2.$$

All the  $N_i$ s cancel, and we see that if we estimate the parameters by first multiplying both the independent and dependent variables through by  $\sqrt{N_i}$  for each county, we have equation (1).

## APPENDIX B

We can obtain estimates from aggregated data which fall outside the 0-100 percent logical boundaries for three reasons. Often, we have a fairly small sample of observations, and by chance the slope of the regression line gives us unreasonable estimates. If we had a very large sample, the slope would be different, and the estimates of, say, the probability of Greenbackers voting "no" in the referendum would be admissible. Usually, such estimates are not very far outside the bounds, and it is sufficient to set them at the logical limits and recalculate the equations accordingly. But it may be that the logical complications arise because we have tried to extrapolate too far beyond our data points or that we have estimated the wrong model.<sup>1</sup> In such cases, logit may be useful.

Consider the problem in estimating what proportion of Greenbackers voted against equalization. The maximum percentage of the adult males who voted in the 1880 presidential race was 31.7 percent. The highest proportion of votes against equalization in 1882 was 62.4 percent. As Figure 1 shows, all the data points are concentrated in the rather small shaded rectangle in the lower left-hand corner of the graph. But in trying to estimate what percentage of the Greenbackers voted against equalization, we are, in effect, predicting how a county which was composed only of members of that party (i.e., which was 100 percent Greenback) would vote. To do this, we have to project the

linear regression line to the point at which it cuts the vertical line on the right-hand side of the graph. Yet this is far beyond the data, which all lies in the shaded box. If our data extended beyond the shaded area, it might lie on a different linear regression line, or even on a nonlinear curve. The point is that it is dangerous to extrapolate so far beyond the available data, and we should not be too surprised to get nonsensical results if we do so.

It is also unreasonable to believe that the world will always be linear. If, in fact, the relation between two or more variables is not linear, we may get illogical estimates because we have estimated an incorrect model. Besides graphing the bivariate relationships and examining them to see whether they fall into obvious nonlinear patterns (log-linear, quadratic, etc.), we might also consider relationships which follow the form of the logit. The logit function describes an S-shaped curve, as in Figure 2, which has an appealing behavioral interpretation. For data in the middle ranges of each variable, the logit relationship is approximately linear. For data on the extremes, however, the curve tails off quite quickly, and asymptotically approaches the X axis and the line parallel to the X axis at Y = 100 percent. Substantively, the theory underlying the curve states that a change in the independent variable from, say, 40 to 60 percent causes a large change in the dependent variable, but a change from 0 to 20 percent or from 80 to 100 percent does not. Once a county is overwhelmingly "X" or "not X," changes in the value of X make little difference in Y. If the analyst has reason to believe such a behavioral assumption appropriate for his data, he should consider trying to fit a logit model.

Moreover, the logit model may also provide a better extrapolation from a limited set of data, such as that in Figure 1, for it allows a relaxation of the very strong linear assumption. It is for this reason that I used logit to estimate the relationships in Table 8.

FOOTNOTE TO APPENDIX B

1. See J. Morgan Kousser, "Ecological Regression and the Analysis of Past Politics," Journal of Interdisciplinary History, IV (1973), 252-62.

FIGURE 1: Bivariate Relationship between Percentage of Greenback, 1880, and Percentage Against Equalization, 1882 Referendum

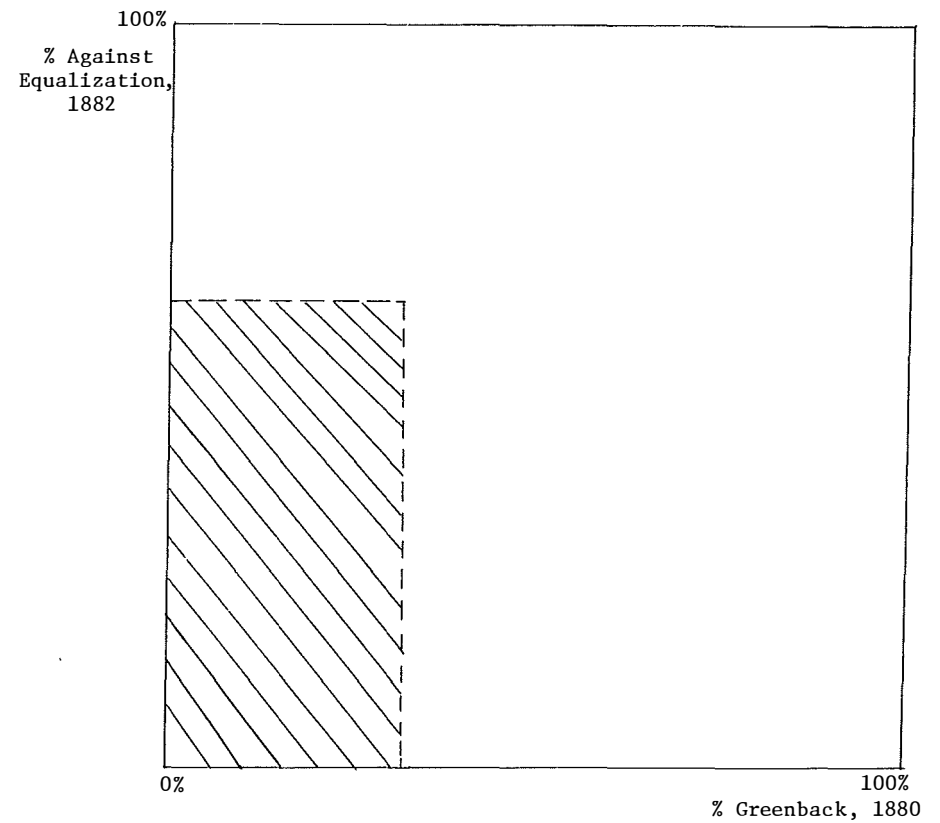


FIGURE 2: An S-shaped Logit Curve

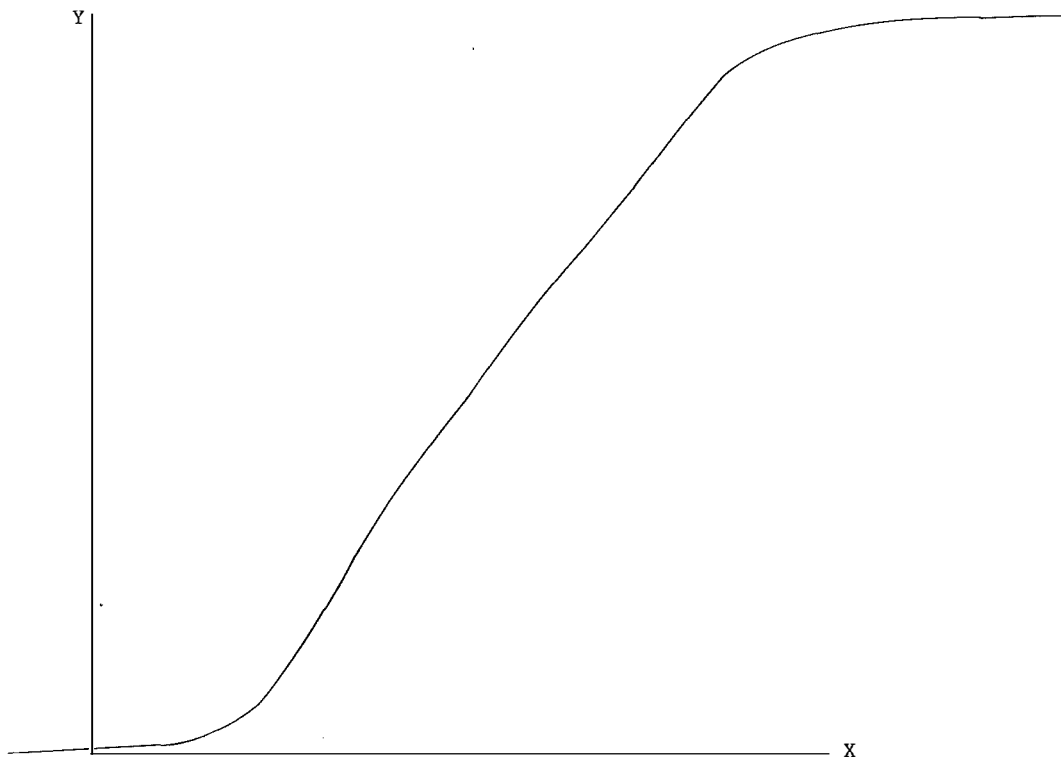
APPENDIX C

Table C-1: Logit Coefficients and Standard Errors for Table 3

<u>Variable</u>	<u>Coefficient</u>	<u>Standard Error</u>
constant (R-L)*	3.4480	2.0629
constant (Reg.)	1.3355	1.9206
% Dem. (R-L)	-5.9093	3.4749
% Dem. (Reg.)	-1.7626	2.9775
% Grbk. (R-L)	-2.9569	7.7005
% Grbk. (Reg.)	0.2841	6.8893
% Rep. (R-L)	-0.4884	4.9227
% Rep. (Reg.)	3.1305	4.3495

\*There are separate coefficients in logit for each alternative considered. Here, the first coefficient in each pair is associated with the probability of falling into the radical or liberal groups (R-L), the second, the regular group (Reg.). The probability of falling into the Bourbon group is obtained by subtraction, after the other probabilities are calculated.

Table C-2: Logit Coefficients and Standard Errors for Table 4

<u>Variable</u>	<u>Coefficient</u>	<u>Standard Error</u>
constant	2.2721	1.3297
% For	-3.2232	2.8208
% Against	-9.5155	3.1601

Table C-3: Logit Coefficients and Standard Errors for Table 5\*

<u>Variable</u>	<u>Coefficient</u>	<u>Standard Error</u>
constant	-1.3925	1.0950
% Negro	-5.2470	5.0106
% Roman	1.6436	1.5291
% Urban	3.9228	1.3220
% Undem	-1.4978	1.9800
Bspend	-0.5068	0.6022
Wtax	-1.2126	1.3700
Wval	0.0009	0.0009

\*For definitions of the variables, please refer to the notes to Table 5 in the text.

Table C-4: Logit Coefficients and Standard Errors for Table 8

<u>Variable</u>	<u>Coefficient</u>	<u>Standard Error</u>
constant (For)	-2.0609	0.0196
constant (Against)	-2.0217	0.0204
% Dem. (F)	2.0996	0.0359
% Dem. (A)	2.7642	0.0370
% Grbk. (F)	2.4021	0.0885
% Grbk. (A)	5.2437	0.0836
% Rep. (F)	2.7503	0.0328
% Rep. (A)	0.8724	0.0363

Table C-5: Logit Coefficients and Standard Errors for Table 9

<u>Variable</u>	<u>Coefficient</u>	<u>Standard Error</u>
constant (For)	-1.4768	0.0406
constant (Against)	-0.3995	0.0420
% Dem. (F)	0.9874	0.0711
% Dem. (A)	0.4164	0.0745
% Grbk. (F)	1.3990	0.1105
% Grbk. (A)	0.5244	0.1072
% Rep. (F)	2.3163	0.0424
% Rep. (A)	-0.9055	0.0467
Wval (\$1000) (F)	.0385	0.0077
Wval (\$1000) (A)	-0.2160	0.0090
Wtax (F)	0.0335	0.0119
Wtax (A)	0.1066	0.0137
Bspend (F)	0.0810	0.0074
Bspend (A)	0.2662	0.0076
Undem. (F)	-0.3157	0.0382
Undem. (A)	0.0822	0.0402
% Negro (F)	-0.2903	0.0534
% Negro (A)	1.2694	0.0590
% Urban (F)	-0.4123	0.0223
% Urban (A)	-1.7247	0.0245
% Roman (F)	-0.5389	0.0192
% Roman (A)	-0.2838	0.0182